

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
25 August 2005 (25.08.2005)

PCT

(110) International Publication Number
WO 2005/078068 A1

(51) International Patent Classification⁷: C12N 1/20
A61K 39/12

(21) International Application Number:
PCT/AU2004/000787

(22) International Filing Date: 14 February 2004 (14.02.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2004900675 12 February 2004 (12.02.2004) AU
2004900679 12 February 2004 (12.02.2004) AU

(71) Applicant (for all designated States except US): THE
UNIVERSITY OF QUEENSLAND [AU/AU]; St Lucia,
QLD 4067 (AU).

(72) Inventor; and

(75) Inventor/Applicant (for US only): MIZUNO, Tetsuo
[JP/AU]; 148 Haven Road, Pullenvale, QLD 4069 (AU).

(74) Agents: HUGHES, E., John, L. et al.; Davies Collison
Cave, 1 Nicholson Street, Melbourne, VIC 3000 (AU).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, GR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TH, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: LIVE ATTENUATED SALMONELLA FOR USE AS VACCINE

(57) Abstract: The present invention relates to live attenuated Salmonella cultures for use as vaccines. The Salmonella cultures of the present invention have a substantially reduced capacity to grow and replicate in the presence of bile. The reduced capacity for growth is due to a metabolic-drift mutation induced by exposure to a combination of nalidixic acid and rifampicin for a time and under conditions sufficient to induce the mutation.



WO 2005/078068 A1

BEST AVAILABLE COPY